

New Stratigraphic Technologies in Exploration/Exploitation: Abstract

R. W. Scott¹, H. R. Lane²

ABSTRACT

With the demand for increased accuracy and precision in the interpretation of seismic sections for the prediction of reservoirs and traps, traditional paleontologic and new non-paleontologic stratigraphic data have assumed a greater role in exploration/exploitation. Strata bounded by sequence boundaries can be dated precisely by the graphic correlation technique. For example, Arabian Cretaceous reservoirs pinch out by facies change and diagenesis into coeval strata. But Pliocene sands in the Gulf Coast are truncated by regional unconformities accentuated by salt dome movement. In this Plio-Pleistocene section high precision chronostratigraphy is achieved by the integration of paleontological and geochemical data.

Detailed biostratigraphic analysis of many sections of Mississippian carbonates along the eastern side of the Transcontinental Arch allows for the recognition of four unconformity-bounded units (biothems of Lane and others, 1994). These biothems have been traced from Illinois to New Mexico and are not easily detected in the subsurface by using seismic or electric log technology because of the rather uniform carbonate lithologies composing the entire Mississippian in the region. Mississippian hydrocarbon production in western Kansas can be shown to be associated with these intra-Mississippian carbonate-on-carbonate unconformities that are easily detected biostratigraphically.

ACKNOWLEDGMENTS AND ASSOCIATED FOOTNOTES

1 Precision Stratigraphy Associates, Tulsa, OK

2 Amoco, Houston, TX

Copyright © 2006 by the Tulsa Geological Society